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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/759,920	01/12/2001	Wayne Kelly	MCA-489 US	2777

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EXAMINER

MENON, KRISHNAN S

ART UNIT PAPER NUMBER

1723

DATE MAILED: 05/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/759,920

Applicant(s)

KELLY ET AL.

Examiner

Krishnan S. Menon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 April 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 32-59 and 61-78 is/are pending in the application.
- 4a) Of the above claim(s) 32-57 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 58, 59 and 61-78 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

Claims 32-59 and 61-78 are pending after the RCE of 2/17/04. Of these, claims 32-57 were withdrawn from consideration.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 58-63, 69-72, 74 and 78 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Pall et al (US 4,431,545).

Pall (545) teaches a process for filtering a fluid containing charged particles comprising filtering through filters having nominal pore size between 0.1 and 10 microns and having zeta potential between 0 and -5 mV. (abstract, col 1 lines 15-24, col 2 lines 20-27: zeta potential less than 20 mV (absolute); col 3 line 25-col 4 line 15) as in claim 58. The membrane surface can be substantially neutral as in claim 59: instant application discloses zeta potential as between -10 and 10 mV for 'substantially neutral' in page 6; zeta potential less than 20 mV in the ref encompasses this range of 'substantially neutral'. LRV of at least 3 as in claim 60 and 61(see abstract). Neutral surface is inherent in one or more of the filters as in claim 62 (col 2 lines 20-27: small

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zeta potential). Formed by surface modification as in claim 63 (col 4 line 40-col 5 line 20; col 8 line 55 – col10 line 25). Filter material is a polyolefin, or polyethylene as in claim 69 - 71 (col 8 lines 38-55). Two or more filters of different IEP as in claim 72 (see abstract). Treating with acrylic acid as in claim 74 (col 8 lines 50-55). LRV of at least 3 for particle diameters less than the pore dia as in claim 78 (col 13 lines 35-51).

Re the newly added limitation of 'each having a zeta potential between about 0 and -5 mV' in the independent claim 58, the claims are open-ended and therefore, do not preclude having other filters in addition to the 'one or more filters ... each having...'.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 64,65 and 75-77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pall (545) in view of Mayhan (US 4,311,573).

Pall (545) discloses all the elements of instant claims as in claim 58. Instant claims add further limitations of the photoinitiator and cross-linking or grafting modification to the filter surface. Mayhan (573) teaches such modifications (abstract, col 6 lines 18-35, examples 4,5). It would be obvious to one of ordinary skill in the art at the time of invention to use the Mayhan (573) teachings to modify the surface of the Pall

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(545) filters as alternate but equivalent hydrophilic surface product for equivalent function because Mayhan (573) teaches these methods to improve the hydrophilicity of the membrane (abstract).

2. Claims 66 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pall (545) in view of McRay (US 5,582,725).

Pall (545) teaches all the limitations of claim 58 but does not disclose ceramics or metals as the filter media as in instant claims. McRay (725) discloses ceramics and metals as filter media (col 2:20-33). One of ordinary skill in the art at the time of invention could chose metal or ceramic materials as alternate but equivalent to the materials in Pall (545) teachings for the filters, and the metals could be stainless steel, etc., because they give increased filtration pressure resistance.

3. Claim 67 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pall (124) in view of Pall (US 4,430,479).

Pall (545) teaches all the elements of claim 17 as in claim 1 above, except the cellulosic materials for the filter. Pall (479) teaches using cellulosic filter for microporous membranes (col 1 lines 44-53). It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Pall (479) in the teachings of Pall (545) to provide a hydrophilic surface (Pall 545: col 8 line 68).

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4. Claim 73 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pall (545) in view of Pall (US 4,617,124).

Pall (545) teaches all the limitations of claim 58. Claim 73 adds further limitation of filters being treated with monomers like acrylamide, which Pall (545) does not teach, but Pall (124) teaches. It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Pall (124) in the teaching of Pall (545) for cross-linking as taught by Pall (124).

### ***Response to Arguments***

No arguments were filed with the RCE or subsequent responses since 2/17/04.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S Menon whose telephone number is 703-305-5999. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L Walker can be reached on 703-308-0457. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

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Patent Examiner

  
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